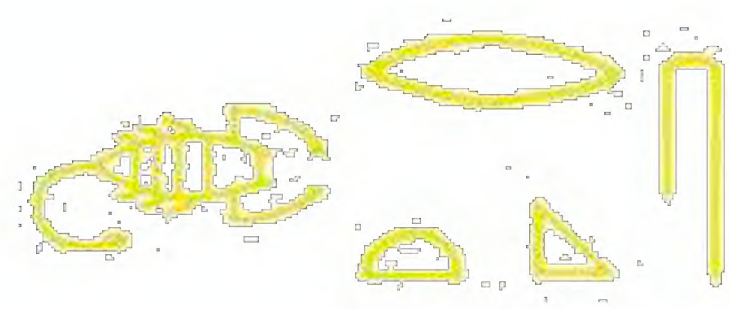

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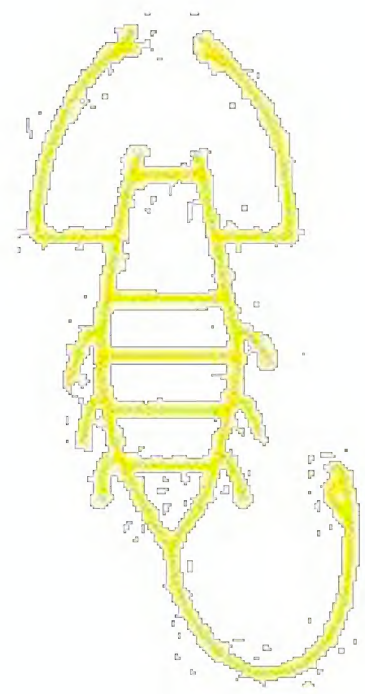

# The Arachnological Bulletin of the Middle East and North Africa

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# A new record of the orb-weaving spider genus *Parawixia* F.O. Pickard-Cambridge, 1904 from Bangladesh (Araneae: Araneidae)

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## Abstract

The orb-weaving spider *Parawixia dehaani* (Doleschall, 1859) of the family Araneidae is a new record for Bangladesh. Generic diagnosis and distribution are provided together with the description of the species.

Keywords: Araneae, Araneidae, *Parawixia*, new record, Bangladesh.

## Introduction

Spiders of the family Araneidae (orb-weavers) are one of the common and fascinating groups of spiders in the crop-fields, gardens, and forests. These are cosmopolitan in distribution and currently contains 3101 species under 169 genera in the world fauna (World Spider Catalog, 2017). Members of the genus *Parawixia* F.O. Pickard-Cambridge, 1904 are very common in the gardens and forests of Bangladesh. They make typical orb-webs within shrubs and trees at night and stay at the middle of the webs for preying. They can also make typical nests folding the dry leaves of nearest plants during breeding season.

The genus *Parawixia* was first established by F.O. Pickard-Cambridge in 1904 with the type-species *Parawixia destricta* (O. Pickard-Cambridge, 1889). It is represented by 28 species (and 3 subspecies) worldwide (World Spider Catalog, 2017). In Asia, the genus was first reported by Thorell (1895) as *Epeira dehaanii* and till date, only *Parawixia dehaani* is recorded in this region, in India and other Asian countries (Tikader, 1982; Keswani *et al*., 2012; Silwal *et al*., 2005; Sen *et al*., 2015; Barrion & Litsinger, 1995; Song *et al*., 1999; Yin *et al*.,1997; Chen & Zhang, 1991; Zhao, 1993; Yaginuma, 1986; World Spider Catalog, 2017) but there is no record in Bangladesh (Okuma *et al*.,

1993; Biswas *et al.*, 1993, 1997; Saha *et al.*, 1995; Begum & Biswas, 1997; Biswas, 1995; Biswas & Raychaudhuri, 2013a, 2013b).

*Parawixia* spiders are Neotropical, nocturnal orb-weavers occurring mainly on the webs and the webs are placed vertically within plants (Levi, 1992). Spiders of this genus are inhabiting in the gardens and forests of Bangladesh and all make the webs at night.

The present paper presents the description of *P. dehaani* (Doleschall, 1859), recorded for the first time from Bangladesh. Generic diagnosis and distribution are provided together with the description of the species.

Bangladesh is rich in forest flora and fauna, so, as a forest species their number must be increase in future study and will help in identification and conservation practices of the endangered spiders of the country. These spiders play a great role in control of forest insect pests. So, continuous such a practice of the use of these natural enemies will help the future forest ecosystem management program.

## Material and Methods

The study was made with the collection of specimens from the gardens of Bagerhat and Khulna districts, Bangladesh. After sorting, all the specimens were preserved primarily in 70% ethanol and after identification the specimens were finally preserved in Audmans' preservatives (90 parts 70% ethanol + 5 parts glacial acetic acid + 5 parts glycerine) following Lincoln and Sheals (1985). The preserved specimens are currently in the collection of the Department of Zoology, Khulna Govt. Womens' College, Khulna-9000, Bangladesh [DOZ, KGWC].

All the necessary body-parts are dissected out and illustrated under Stereozoom microscope. Epigynum is dissected and cleared in 10% KOH. Leg measurements are given as in the following sequence: femur, patella, tibia, metatarsus, tarsus, and total length. All measurements are in millimetres.

Identification references consulted are: Tikader & Biswas (1981), Tikader (1982), Barrion & Litsinger (1995), Yin *et al.* (1997), Song *et al.* (1999), Yin *et al.* (2012), and Sen *et al.* (2015).

## Results

### Taxonomy

Family **Araneidae** Clerck, 1757

Genus ***Parawixia*** F.O. Pickard-Cambridge, 1904

Type species ***P. destricta*** (O. Pickard-Cambridge, 1889)

**Diagnosis:** Spiders of the genus *Parawixia* F.O. Pickard-Cambridge, 1904 are medium to large in size. Cephalothorax with cephalic region bulging behind the ocular area, granulate. Anterior row of eyes procurved, dissimilar. Maxillae and labium wider than long, both scopulate. Labium with a longitudinal dorsal band. Sternum brown or yellow, broad, wider than long, with or without a broad median longitudinal band. Legs long, slender, spiny, with 3 claws. Abdomen broad, with paired humps. Epigynum with swollen base and short break like unwrinkled scape.

**Biological note:** Spiders of this genus are commonly found on the webs made by their own within trees. They are nocturnal and live on the middle of the web. The webs are also made at night and arranged vertically as the spiders stay laterally on the webs. They are one of the important bio-control agents of insect pests in the gardens and forests.

**Distribution:** Central and South America, India, Indonesia, Philippines, New Guinea.

***Parawixia dehaani*** (Doleschall, 1859)
(Figs. 1a-g)

*Epeira dehaanii* Doleschall, 1859: 33.
*Epeira khandarensis* Thorell, 1877: 372.
*Epeira submucronata* Simon, 1887: 106.
*Epeira dehaanii* Thorell, 1895: 170.
*Araneus dehaani* Simon,1899: 90; Pocock, 1900: 225; Roewer, 1938: 38; Sinha, 1952: 84; Chrysanthus, 1960: 31; Tikader, 1970: 30; Yin *et al*., 1997: 133.
*Parawixia dehaanii* Tikader, 1982: 212.
*Parawixia dehaani* Barrion & Litsinger, 1995: 582.
[All synonyms and references are listed in the World Spider Catalog (2017)]

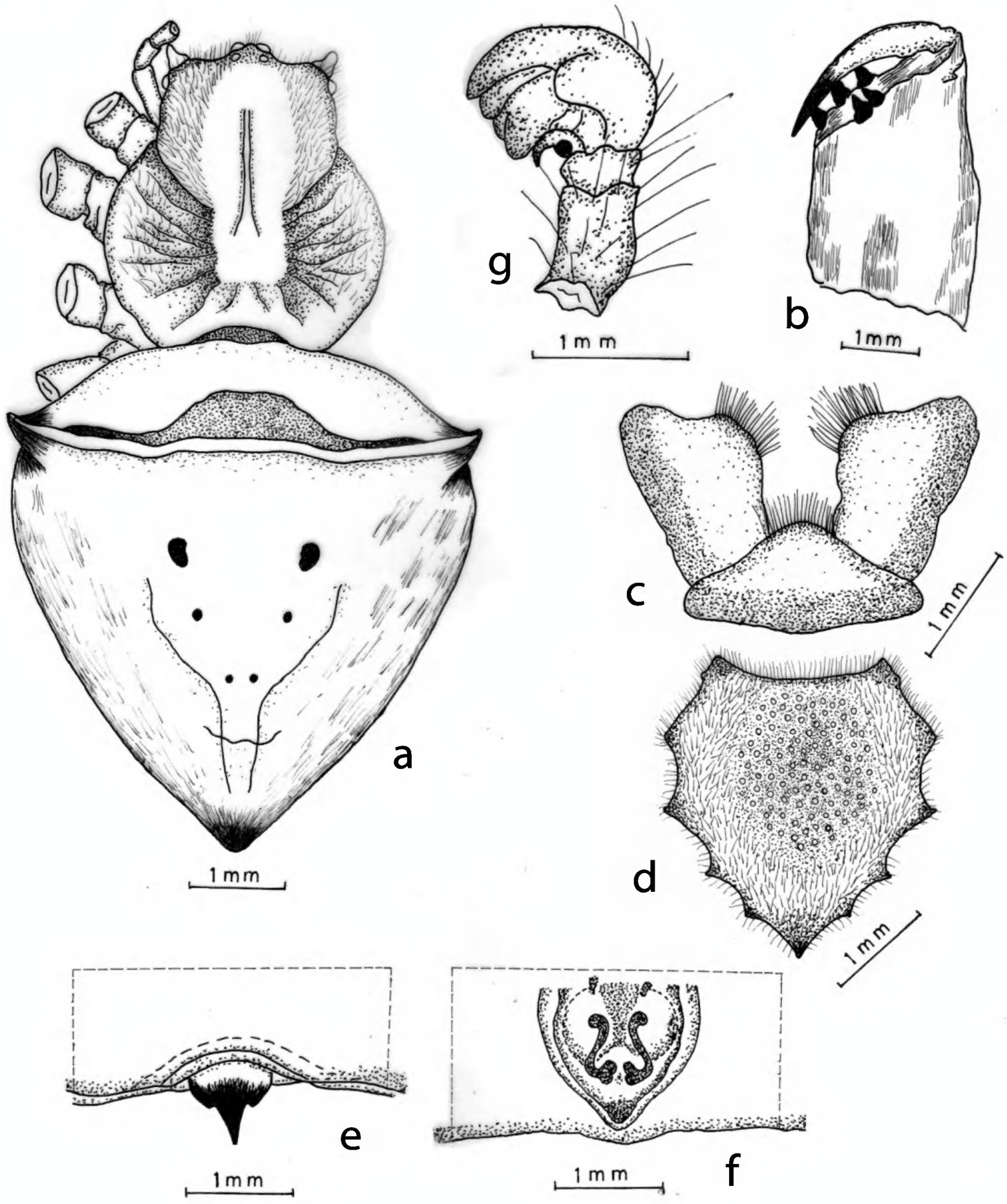


Fig 1. *Parawixia dehaani* (Doleschall, 1859)
a. Female habitus, dorsal view. b. Chelicera. c. Maxillae and labium.
d. Sternum. e. Epigynum. f. Vulvae. g. Male palp.

**Material examined:** 3♀♀, Bagerhat, 12.II.1994, Coll. V. Biswas; 1♀, Brahmonbaria, 5.X. 1999, Coll. V. Biswas; 2 ♀♀, 1♂, Dhaka, 12.VII. 2008, Coll. V. Biswas.

All specimens are deposited at present in the collection of the Department of Zoology, Khulna Govt. Womens' College and will be reposited in the Museum of the Department of Zoology, University of Dhaka, Bangladesh.

**Description of the female** (Fig. 1a): Body small to medium. Cephalothorax and legs deep red brown and abdomen dark brown. Total body length 23.00. Carapace 9.00 long, 7.50 wide. Abdomen 14.00 long and 13.00 wide.

Cephalothorax: Carapace deep red brown, longer than wide, narrowing anteriorly, with pubescence and hairs; posteriorly broad; cephalic region raised, medially carinate, anteriorly truncate with 1 median tuberance and 2 lateral spiny tubercles; thoracic region posteromedially with a deep brown fovea; cervical furrows deeply distinct. Eyes dark brown, dissimilar; anterior row of eyes procurved; lateral eyes close, unequal and situated marginally on lateral tubercles; ocular quad squarish. Chelicerae dark brown, each of inner and outer margins with 2 and 3 teeth (Fig. 1b). Maxillae dark brown, longer than wide, medially broad, anteriorly scopulate (Fig. 1c). Labium dark brown, wider than long, anteriorly scopulate (Fig. 1c). Sternum dark brown, warty, broad, heart-shaped, posteriorly pointed (Fig. 1d).

Legs long and strong, clothed with strong spines, pubescence and hairs; legs formula 4213 and the measurements are shown in Table (1).

Table 1. Measurements of leg segments of *Parawixia dehaani* (Doleschall, 1859) ♀.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total length |
|---|---|---|---|---|---|---|
| I | 7.00 | 3.00 | 5.00 | 5.00 | 2.10 | 22.10 |
| II | 7.00 | 3.50 | 5.50 | 5.50 | 2.50 | 24.00 |
| III | 5.00 | 2.50 | 3.00 | 3.00 | 1.50 | 15.00 |
| IV | 9.00 | 3.00 | 6.00 | 6.00 | 2.00 | 26.00 |

Abdomen: Triangular, warty, longer than wide, clothed with hairs and pubescence, with 2 pointed spine-like lateral shoulder humps and one pointed posterior tail hump, a chalk-white transverse band extending in between 2 shoulder humps; dorsum with Y-shaped brown markings and 5 pairs of sigilla arranged longitudinally; ventrally greyish brown with distinct dark-brown patches. Epigynal scape long and pointed, base broad; epigynum and internal genitalia as in Figs. (1e-f).

Male slightly smaller than female. Body dark brown, legs long and spiny. Male palps with curved palpal organs (Fig. 1g).

## Acknowledgments

We express our thanks to Dr. S.C. Majumder, Scientist-SD, Zoological Survey of India, Kolkata, for kind help in confirmation of the identity of the species and the Principal, Government P.C. College, Bagerhat-9301, Bangladesh, for kind permission during the course of this investigation.

## References

Barrion, A.T. & Litsinger, J.A. 1995. *Riceland Spiders of South and Southeast Asia*. CAB International, Wallingford, UK, xix + 700 pp.

Begum, A. & Biswas, V. 1997. A list of spider fauna of Barisal division, Bangladesh (Araneae; Arachnida). *Bangladesh J. Zool.,* 25(2): 207-210.

Biswas, V. 1995. *Studies on the spider fauna (Araneae: Arachnida) of Bangladesh*. Ph.D. thesis, Department of Zoology, University of Calcutta, 622p + 50 plates.

Biswas, V. & Raychaudhuri, D. 2013a. Orb-weaving spiders of Bangladesh-I: genus *Araneus* Clerck (Araneae: Araneidae) with two new species. *Records of the Zoological Survey of India*, 113(2): 157-162.

Biswas, V. & Raychaudhuri, D. 2013b. Orb-weaving spiders of Bangladesh: genus *Neoscona* Simon (Araneae: Araneidae). *Records of the Zoological Survey of India*, 113(2): 169-188.

Biswas, V., Saha, S. & Raychaudhuri, D. 1997. Araneidae and Theridiidae of Buxa Tiger Reserve, West Bengal: Genera *Leucauge* White, *Cyrtophora* Stoliczka and *Theridula* Emerton. *Entomon* 22(3-4): 229-233.

Biswas, V., Khan, H.R., Kamal, N.Q. and Begum, A. 1993. A preliminary study of the rice-field spiders of Jhenidah, Bangladesh. *Bangladesh J. Zool*., 21(1): 85-92.

Chen, Z.F. & Zhang, Z.H. 1991. *Fauna of Zhejiang: Araneida*. Zhejiang Science and Technology Publishing House, 356 pp.

Doleschall, C.L. 1859. Tweede Bijdrage tot de Kenntis der Arachniden van den Indischen Archipel. *Acta Societatis Scientiarum Indo-Neerlandica*, 5: 1-60.

Keswani, S., Hadole, P. & Rajoria, A. 2012. Checklist of spiders (Arachnida: Araneae) from India. *Indian Journal of Arachnology,* 1(1): 101-129.

Levi, H.W. 1992. Spiders of the orb-weaver genus *Parawixia* in America (Araneae: Araneidae). *Bulletin of the Museum of Comparative Zoology at Harvard College*, 153(1): 1-46.

Lincoln, R.J. & Sheals, J.G. 1985. *Invertebrate Animals: Collection and Preservation.* British museum (Natural History ), London, 150p.

Okuma, C., Kamal, N.Q., Hirashima, Y., Alam, M.Z. & Ogata, K. 1993. *Illustrated Monograph of the Rice Field Spiders of Bangladesh.* Institute of Postgraduate Studies in Agriculture (Salna, Gazipur, Bangladesh). Japan International Cooperation Agency Project Publication, 1, 93 pp.

Saha, S., Biswas, V., Majumder, S.C. & Raychaudhuri, D. 1995. Araneidae of Buxa Tiger Reserve, West Bengal. *Acta Arachnologica*, 44(1): 11-14.

Sen, S., Dhali, D.C., Saha, S. & Raychaudhuri, D. 2015. Spiders (Araneae: Arachnida) of Reserve Forests of Dooars: Gorumara National Park, Chapramari Wildlife Sanctuary and Mahananda Wildlife Sanctuary. *World Scientific News*, 20: 1-339.

Silwal, M., Molur, S. & Biswas, B.K. 2005. Indian spiders (Arachnida: Araneae): updated checklist 2005. *Zoos' Print Journal*, 20(10): 1999-2049.

Sinha, T.B. 1952. Some Indian spiders of the family Argiopidae. *Records of the Indian Museum, Calcutta*, 49: 67-88.

Song, D.X., Zhu, M.S. & Chen, J. 1999. *The Spiders of China*. Hebei University of Science and Techology Publishing House, Shijiazhuang, 640 pp.

Thorell, T. 1895. *Descriptive catalogue of the spiders of Burma*. London, pp. 1-406.

Tikader, B.K. 1970. Spider fauna of Sikkim. *Records of the Zoological Survey of India*, 64(1-4): 1-83.

Tikader, B.K. 1982. Family Araneidae (=Argiopidae), typical orbweavers. *Fauna India* (Araneae), 2(1): 1-293.

Tikader, B.K. & Biswas, B. 1981. Spider fauna of Calcutta and vicinity: Part-I. *Records of the Zoological Survey of India, Occasional Paper* **30**: 1-149.

World Spider Catalog 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 18.0, accessed on {23/04/2017}

Yaginuma, T. (1986a). *Spiders of Japan in color* (new ed.). 2nd edition, Hoikusha Publishing Co., Osaka, 305p.

Yin, C.M., Peng, X.J., Yan, H.M., Bao, Y.H., Xu, X., Tang, G., Zhou, Q.S. & Liu, P. 2012. *Fauna Hunan: Araneae in Hunan, China*. Hunan Science and Technology Press, Changsha, 1590 pp.

Yin, C.M., Wang, J.F., Zhu, M.S., Xie, L.P., Peng, X.J. & Bao, Y.H. 1997. *Fauna Sinica: Arachnida: Araneae: Araneidae*. Science Press, Beijing, xiii + 460 pp.

Zhao, J.Z. 1993. *Spiders in the Cotton Fields in China*. Wuhan Publishing House, Wuhan, China, 552 pp.

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# A new species, *Pandava aruni* (Araneae: Titanoecidae) from Lonar Crater Sanctuary, India

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## Abstract

A new species of the spider genus *Pandava* Lehtinen, 1967 is described from Lonar Crater Sanctuary, India. The description of *Pandava aruni* sp. nov., its morphological characters, and illustrations are presented here. *P. aruni* sp. nov. resembles *P. laminata* (Thorell, 1878), *P. ganesha* Almeida-Silva, Griswold & Brescovit, 2010, and *P. sarasvati* Almeida-Silva, Griswold & Brescovit, 2010 in the general shape of the epigynum, but differs by epigynal rim attached, looped spermathecae and long, strongly sclerotized copulatory ducts that are visible through the cuticle.

Keywords: Araneae, Titanoecidae, *Pandava*, new species, Lonar, India.

## Introduction

The spider family Titanoecidae Lehtinen, 1967 presently includes five genera and 53 species in the world (World Spider Catalog, 2017). The spider genus *Pandava* Lehtinen, 1967 is currently represented by 9 species in the world among which six are found in India. They are: *P. andhraca* (Patel & Reddy, 1990), *P. ganesha* Almeida-Silva, Griswold & Brescovit, 2010, *P. ganga* Almeida-Silva, Griswold & Brescovit, 2010, *P. kama* Almeida-Silva, Griswold & Brescovit, 2010, *P. nathabhaii* (Patel & Patel, 1975), and *P. shiva* Almeida-Silva, Griswold & Brescovit, 2010.

Yin & Bao (2001) described *P. hunanensis* from Hunan Province, China. Jäger (2008) reported *P. laminata* (Thorell, 1878) in Germany for the first time at Cologne Zoo saying that "The species was most likely introduced with plants or cargo from Southeast Asia" and presented the characters important for identification of the species.

Genus *Pandava* is diagnosed by "the reduced tegular process on the male palp and the anterior position of the copulatory openings on the female epigynum" (Almeida-Silva *et al.*, 2010). The revision of the Asian genus *Pandava* and the updated description of known species, added five new species viz., *P. shiva* from Pakistan, *P. ganesha*, *P. kama* and *P. ganga* from India and *P. sarasvati* from Myanmar and the first record of *Pandava* from Africa by Almeida Silva *et al.* (2010)*.

Marusik *et al.* (2012) transferred four species from India and Nepal which were incorrectly assigned to *Amaurobius* to three genera of Titanoecidae including *P. andhraca* and *P. nathabhaii*.

The current paper presents the description and illustrations of the new species *Pandava aruni* sp. nov. from Lonar crater Sanctuary, India.

## Material and Methods

The present study is based on material collected in 2012, 2015, and 2016 from the Lonar Crater Sanctuary and J.D. Patil Sangludkar Mahavidyalaya campus, Daryapur, District-Amravati, Maharashtra, India. Four female specimens were collected by active search method and hand picking. All specimens were preserved in 70% ethanol and female genitalia were excised using fine surgical scalpel. The epigynum was then cleared in 10% KOH aqueous solution. The basic identification of specimens was made by a Carl-Zeiss Stemi 2000-c stereo-zoom microscope mounted with Axio Cam ERc5s camera. All specimens were currently deposited in the Spider Research Lab of J.D.P.S.M, Daryapur. All measurements are in millimetres.

Abbreviations used: ALE = anterior lateral eye; AME = anterior median eye; CD = copulatory duct; CO = copulatory opening; ER = epigynal rim; FD = fertilization duct; MF = median field of the epigynum; PLE = posterior lateral eye; PME = posterior median eye; S = spermatheca; SD = sinuous depression.

## Results

*Pandava* Lehtinen, 1967

Type-species by monotype and original designation: *Amaurobius laminatus* Thorell, 1878: 168; *Pandava* Lehtinen, 1967: 255, figs. 425–426, 440; World Spider Catalog (2017).

***Pandava aruni*** sp. nov. (Figs. 1-13)

**Material examined**: Holotype ♀, from Lonar Crater Sanctuary, District-Buldhana, Maharashtra, India (19°58'23.63"N, 76°30'23.03"E), 6-10-2012, Collected by A.K. Bodkhe (SR lab JDPSM); 3♀♀ paratypes from J.D. Patil Sangludkar Mahavidyalaya campus, Daryapur, District-Amravati, Maharashtra, India, 05-08-2015 & 15-11-2016, Collected by Shripad Manthen & Subhash Kamble (SR Lab JDPSM, Daryapur).

**Etymology:** The specific name is a noun in apposition of Adv. Arun Shelke, President of Shri Shivaji Education Society Amravati, Maharashtra, India.

**Diagnosis:** *Pandava aruni* sp. nov. resembles *P. ganesha*, *P. laminata*, and *P. sarasvati* in the general shape of the epigynum, but differs by epigynal rim attached, the narrow posterior portion, spermathecae looped and long, strongly sclerotized copulatory ducts that are visible through the cuticle.

---

* Editorial note. I think that Almeida Silva *et al.* (2010) meant the first record of *Pandava* not Titanoecidae from Africa. Both *Nurscia* Simon, 1874 and *Titanoeca* Thorell, 1870 are known from Africa before 2010.

**Description:** Female (Holotype) Total length 5.90; Cephalothorax 2.54 long, 1.60 wide; abdomen 3.24 long, 2.20 wide. Eyes and interdistances AME 0.11; ALE 0.12; PME 0.10; PLE 0.12; AME-AME 0.09; AME-ALE 0.12; PME-PME 0.16; PME-PLE 0.23, AME-PME 0.12; ALE-PLE 0.04.

Medium sized, araneomorph, cribellate, dark coloured, entelegyne spider. Carapace with cephalic region dark coloured, elevated cephalic region which is higher in position. Less wide than thoracic region. Anterior tip flat. Eyes situated at anterior tip. Thoracic region flat, posterior margin centrally constricted, fovea distinct light coloured, shallow. Radial furrow light coloured. Smooth surface. (Figs. 1-5 & 9)

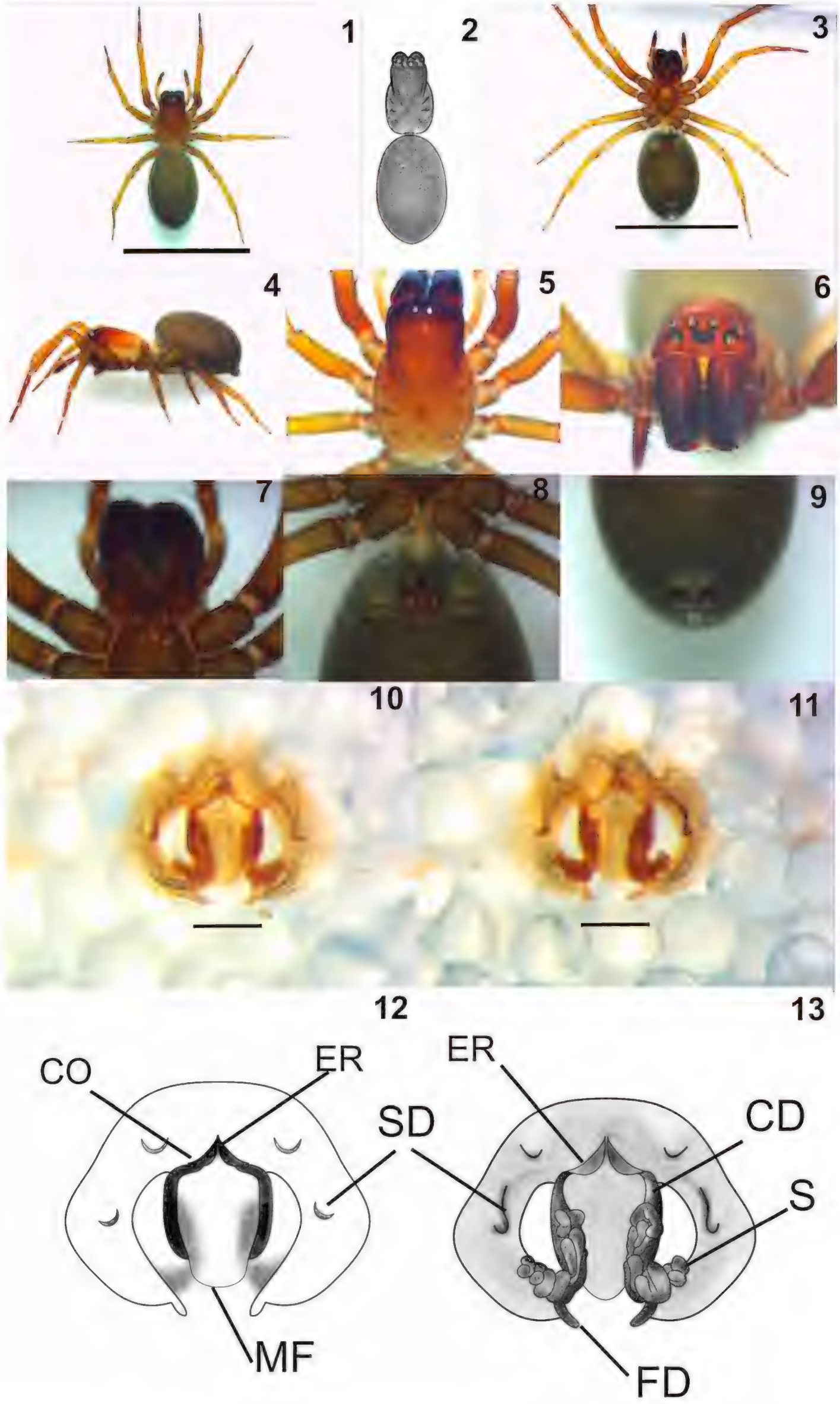
Eyes eight, arranged in two rows; anterior row straight, situated slope or downwardly directed; posterior row slightly recurved; lateral eyes close together, slightly higher in position or on tubercle. Eye region surrounded by curved and straight setae. Medians well separated, slightly smaller than laterals. AME and ALE joining are black coloured. Eyes projected outside (Fig. 6). Smaller clypeus with a few setae over it, without distinct chilum. Sternum pointed at posterior tip, flat at anterior tip lateral boarder truncated rough margin, clothed with black hairs. Dirty yellowish brown coloured. Roughly shield shaped. Labium longer than wide anterior pointed posterior flat middle broad than posterior end. Endites strong reddish brown, medially compressed lateral margins, with numerous black setae over it, bunch of scopulae at anterior promarginal tip, single row of serrulae at its proximal tip (Fig. 7). Chelicerae reddish black, straight, strong, three teeth at promargin, among its first one is smaller, rest larger. Two teeth at retromargin of same size but like small denticles. Fangs strong, less curved pointed with serrated margins. Chelicerae with numerous long and curved black setae. Boss single, small. Leg formula 1423, leg I & II dark coloured, III & IV light coloured. Entirely covered with black plumose setae, measurements of leg segments as in table (1). Long coxae, short trochanters, lack spines at coxa, trochanter, femur patella and tarsus, spines are present on metatarsus and tibia. Short slightly curved projection at retro-lateral side on patella. Female palp with single claw, tarsus and tibia dark brown, rest of the segments are light or yellow coloured. Spination as in table (2).

Abdomen oval entirely clothed with black plumose hairs and dorsum without banding, but having numerous small circular white spots randomly distributed all over the abdomen. Ventrally with epigastric scuta beneath epigynum and lungs are situated. Small white spots present dorsally as well as laterally, absent in middle margin. Cribellum bi-divided.

Epigynum with the narrow posterior portion, epigynal rim attached, spermathecae looped and long, strongly sclerotized copulatory ducts that are visible through the cuticle (Figs. 10-13).

Table 1. Measurements of leg segments of *Pandava aruni* sp. nov. ♀ (in mm).

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total length |
|---|---|---|---|---|---|---|
| I | 1.76 | 0.96 | 2.06 | 1.68 | 0.94 | 7.40 |
| II | 1.45 | 0.93 | 1.67 | 1.60 | 0.98 | 6.63 |
| III | 0.86 | 0.83 | 1.32 | 1.43 | 0.75 | 5.19 |
| IV | 1.38 | 0.92 | 1.86 | 1.77 | 0.79 | 6.72 |




Figs. 1-13. *Pandava aruni* sp. nov. 1-4. Habitus. 1-2. dorsal view. 3. ventral view. 4. lateral view. 5-6. Cephalothorax. 5. dorsal view. 6. frontal view. 7. Labium and endites. 8. Epigynum, ventral view before dissection. 9. Spinnerets and cribellum. 10-13. Epigynum, cleared. 10, 12. ventral view. 11, 13. vulvae, dorsal view.
Scale bars: (1 & 3) 5 mm, (10 & 11) 0.2 mm.

Table 2. Spination of legs of *Pandava aruni* sp. nov. ♀.

| Leg | Femur | Tibia | Metatarsus |
|---|---|---|---|
| I | Pl 1 | Pl 1, v 2-2 | Pl 1-1, v 2-2-2 |
| II | - | Pl 1-1, v 2 | Pl 1-1, v 2-2-3 |
| III | - | d1, rl 1,pl 1 | Pl2, rl2, v2-2-3 |
| IV | - | Pl1, rl1, v1 | Pl1, rl1, v 2-2-3 |

d = dorsal, Pl = prolateral, rl = retrolateral, v = ventral.

## Acknowledgments

We are very grateful to Science and Engineering Research Board (SERB), Department of Science and Technology (DST), New Delhi (SR/FT/LS-08/2011) for financial support. We are thankful to Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden, Nagpur & Maharashtra State Biodiversity Board (MSBB), Nagpur for providing necessary permission for this work. We are also thankful to Dr. Sawan Deshmukh for his field assistance that helped in the field work and our Principal Dr. R.M. Bhise, J.D.P.S.M, Daryapur for giving necessary facilities for research work.

## References

Almeida-Silva, L.M., Griswold, C.E. & Brescovit, A.D. 2010. Revision of the Asian spider genus *Pandava* Lehtinen (Araneae: Titanoecidae): description of five new species and first record of Titanoecidae from Africa. *Zootaxa*, 2630: 30-56.

Jäger, P. 2008. *Pandava laminata*, eine weitere nach Deutschland importierte Spinnenart (Araneae: Titanoecidae). *Arachnologische Mitteilungen*, 36: 4-8.

Lehtinen, P.T. 1967. Classification of the cribellate spiders and some allied families, with notes on the evolution of the suborder Araneomorpha. *Annales Zoologici Fennici*, 4: 199-468.

Marusik, Y.M., Ballarin, F. & Omelko, M.M. 2012. On the spider genus *Amaurobius* (Araneae, Amaurobiidae) in India and Nepal. *ZooKeys*, 168: 55-64.

Patel, B.H. & Patel, H.K. 1975. A new record of the family Amaurobiidae (Arachnida: Araneae) from India. *Journal of the Bombay Natural History Society*, 72: 800-803.

Patel, B.H. & Reddy, T.S. 1990. A new species of *Amaurobius* Koch (Araneae: Amaurobiidae) from coastal Andhra Pradesh, India. *Entomon*, 15: 41-43.

Thorell, T. 1878. Studi sui ragni Malesi e Papuani. II. Ragni di Amboina raccolti Prof. O. Beccari. *Annali del Museo Civico di Storia Naturale di Genova*, 13: 1-317.

World Spider Catalog 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 18.0, accessed on {10/03/2017}

Yin, C.M. & Bao, Y.H. 2001. Two new species of the family Titanoecidae from Hunan Province (Arachnida: Araneae). *Journal of Changde Teachers University, Natural Science Edition*, 13(3): 58-61.

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***Pandava aruni* Bodkhe, Uniyal, Kamble, Manthen, Santape & Chikhale, 2017**
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*Serket* (2017) vol. 15(3): 124-126.

# *Setaphis parvula* (Lucas, 1846) (Araneae: Gnaphosidae) is a new record for the Turkish spider fauna

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## Abstract

The gnaphosid spider species, *Setaphis parvula* (Lucas, 1846) is recorded for the first time from Turkey. Its general habitus and genitalia are illustrated. Notes and collecting data of this species are given.

Keywords: Araneae, Gnaphosidae, *Setaphis parvula*, new record, Turkey.

## Introduction

The family Gnaphosidae is one of the big spider families, which contains worldwide 2197 species from 125 genera (World Spider Catalog, 2017). This family is at present the largest and the most studied spider family in Turkey. The known gnaphosid fauna of Turkey includes 133 species and 30 genera (Topçu *et al.*, 2005; Bayram *et al.*, 2017).

*Setaphis* Simon, 1893 is a genus of the Zelotine spiders, with 21 species being listed in the latest version of the World Spider Catalog (2017). Seven genera of zelotine spiders, which have preening comb (a dense cluster of stiff setae) found distally on the metatarsi of legs III and IV, are found in Turkey. They are *Berinda*, *Camillina*, *Drassyllus*, *Setaphis*, *Trachyzelotes*, *Urozelotes*, and *Zelotes*. *Setaphis* is one of the less known genera among the Gnaphosidae of Turkey. Only three species of the genus have so far recorded in the country: *S. carmeli* (O. Pickard-Cambridge, 1872), *S. fuscipes* (Simon, 1885), and *S. gomerae* (Schmidt, 1981) (Bayram *et al.*, 2017). The aim of this paper is to present the gnaphosid spider S*etaphis parvula* (Lucas, 1846) as a new record for the Turkish araneofauna.

## Material and Methods

In this study, five female specimens were obtained by aspirator and hand collecting from Afyon Province in inner Part of Western Anatolia (Fig. 1). Examined

specimens were preserved in 70% ethanol and deposited in the Arachnology Museum of Ömer Halisdemir University (OHUAM). The identification and photographs were made by means of Olympus SZ61 stereomicroscope.

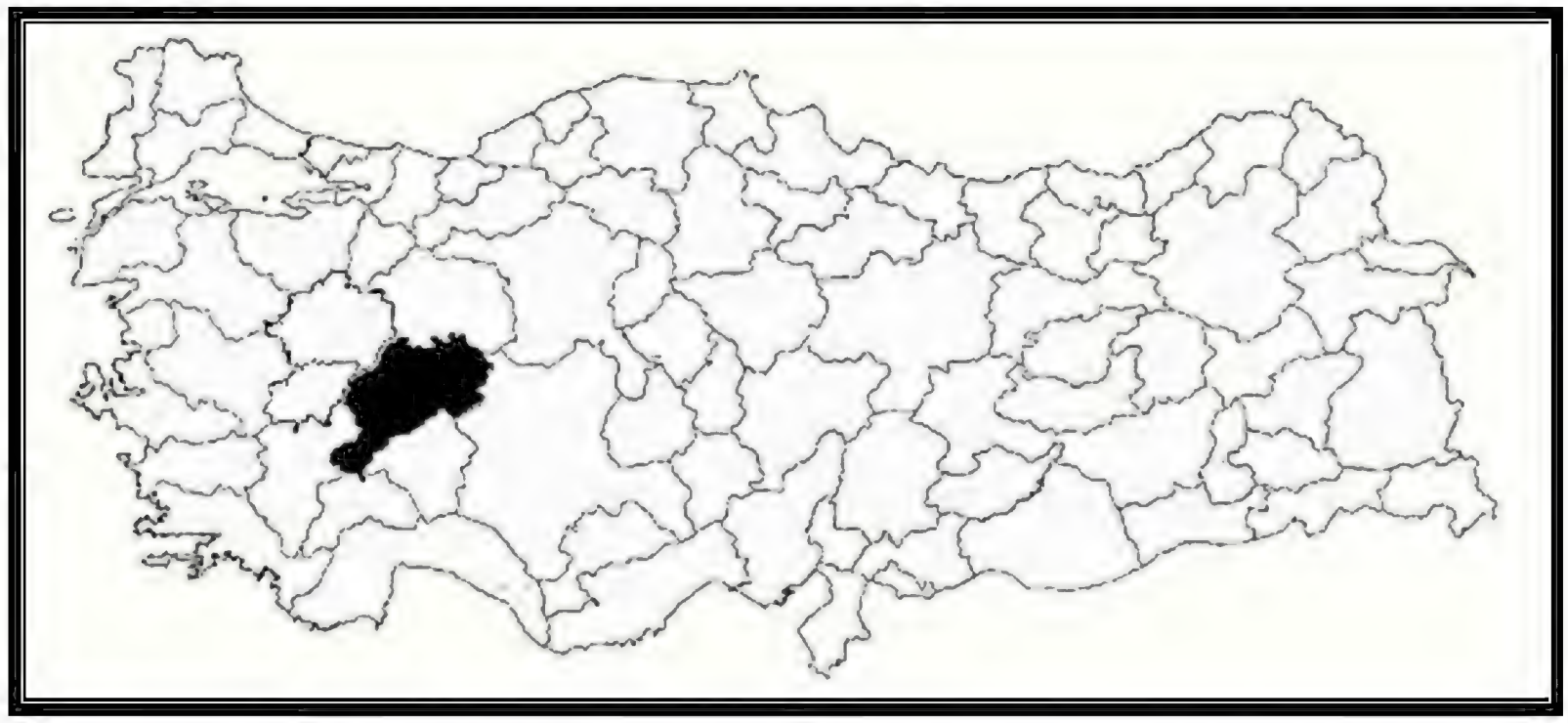

Fig. 1. Map of collecting sites of S*etaphis parvula* (Lucas, 1846) in Afyonkarahisar Province in Turkey.

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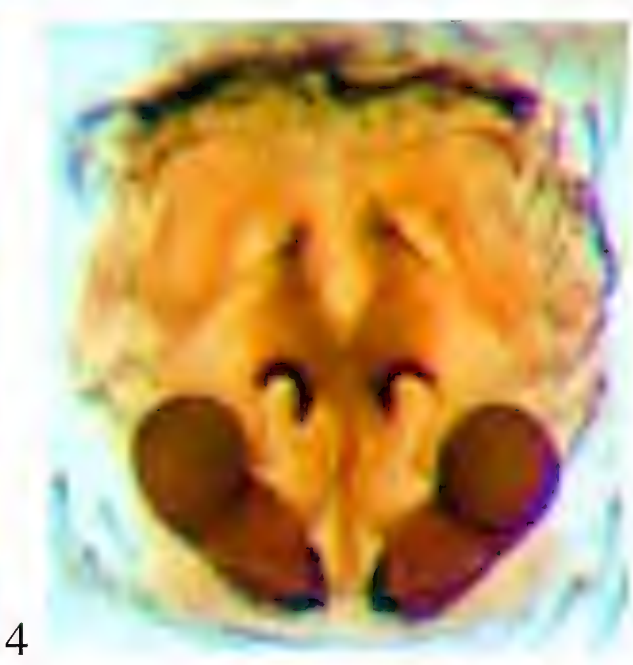

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Figs. 2-4. S*etaphis parvula* (Lucas, 1846) ♀. 2. Habitus, dorsal view. 3. Epigynum, ventral view 4. Vulvae, dorsal view.

## Results

**S*etaphis parvula*** (Lucas, 1846) (Figs. 2-4)

**Taxonomic references**

*Drassus parvulus* Lucas, 1846; *Melanophora parvula* Simon, 1864; *Prosthesima suavis* Simon, 1878; *Prosthesima parvula* Pavesi, 1884; *Setaphis parvula* Simon, 1893; *Setaphis suavis* Simon, 1893; *Setaphis lucasi* Roewer, 1951; *Setaphis parvula* Platnick & Murphy, 1996; *Setaphis parvula* Murphy, 2007.

[All synonyms and references are listed in the World Spider Catalog (2017)]

**Material examined:** Afyonkarahisar Province: Şuhut District, Başören village, under stone, (38°28'01"N, 30°25'16"E), 1539 m, 1♀ (31.V.2015); 1♀ (26.VI.2015). Between Şuhut-Sandıklı District, under stone, (38°28'13"N, 30°21'47"E), 1525 m, 2♀♀ (29.V.2016). Sandıklı District, on soil, (38°24'43"N, 30°13'26"E), 1020 m, 1♀ (29.V.2016). All specimens are deposited in Ömer Halisdemir University Arachnology Museum.

**Identification references and description:** Platnick & Murphy (1996), Murphy (2007).

**World distribution.** Western Mediterranean (World Spider Catalog, 2017), Portugal and Corsica (Murphy, 2007), and Turkey (this study).

## Acknowledgment

The authors acknowledge the Scientific and Technological Research Council of Turkey (TÜBİTAK) (Project no: 214Z016). This study is part of the master thesis of the second author.

## References

Bayram, A., Kunt, K.B. & Danışman, T. 2017. *The checklist of the spiders of Turkey*. Version 2017, online at http://www.spidersofturkey.info.

Murphy, J. 2007. *Gnaphosid genera of the world*. British Arachnological Society, St Neots, Cambridgeshire 1, i-xii, 1-92; 2, i-ii, 93-605.

Platnick, N.I. & Murphy, J.A. 1996. A review of the zelotine ground spider genus *Setaphis* (Araneae, Gnaphosidae). *American Museum Novitates*, 3162: 1-23.

Topçu, A., Demir, H. & Seyyar, O. 2005. A checklist of the spiders of Turkey. *Serket*, 9(4): 109-140.

World Spider Catalog 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 18.0, accessed on {April 2017}

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# A new jumping spider record for the fauna of Turkey (Araneae: Salticidae)

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## Abstract

*Aelurillus aeruginosus* (Simon, 1871) is identified as a new record for the Turkish araneofauna. Its morphology is briefly described and illustrated.

Keywords: Araneae, Salticidae, *Aelurillus*, fauna, new record, Turkey.

## Introduction

Salticidae Blackwall, 1841 is the largest family in Araneae and currently represented by 5950 species belonging to 625 genera in the world (World Spider Catalog, 2017). There are 106 species in 40 salticid genera listed for Turkey (Bayram *et al*., 2017). With latest records, the total number of salticids recorded from Turkey became 135 species (Logunov, 2015; Coşar & Varol, 2016; Yalçın *et al*., 2016). *Aelurillus alboclypeus* Azarkina & Komnenov, 2015 was recorded as a new species from Turkey (Azarkina & Komnenov, 2015). Also, *Aelurillus guecki* Metzner, 1999 was recorded for the first time from Turkey by Yalçın *et al.* (2016). In this study, *Aelurillus aeruginosus* (Simon, 1871) is recorded for the first time from Turkey. Therefore, the known species of genus *Aelurillus* Simon, 1884 is raised to eight in Turkey.

## Material and Methods

The specimens were collected from Southeast Anatolia Region (Şanlıurfa) by means of hand aspirator from stony ground and preserved in 70% ethanol. SZX16 Olympus binocular stereomicroscope was used during identification. Identification depended on Szüts & Azarkina (2002). Examined specimens were deposited in the Arachnology Museum of Ömer Halisdemir University (ÖUAM). World distribution of the new record follows the World Spider Catalog (2017).

## Results

In this study, *Aelurillus aeruginosus* (Simon, 1871) is recorded for the first time from Turkey. Therefore, the known species of genus *Aelurillus* Simon, 1884 is raised to eight in Turkey. The total number of this family recorded from Turkey is now 136 species.

***Aelurillus aeruginosus*** (Simon, 1871)
**Material examined:** Şanlıurfa Province, along road Yaylak-Kabacık (37°21'13.26"N, 38°23'7.65"E), 690 m., 29.06.2008, 1♂; Şanlıurfa Province, Karaköprü road (37°12'6.49"N, 38°47'41.40"E), 735 m., 21.06.2009, 1♀.
**Description:** (Fig. 1) Female: Body length 4.3 mm. Prosoma dark brown. Opisthosoma greyish yellow. Legs yellow. Epigyne with two oval windows and spermathecae are close to each other posteriorly. Male: Body length 4.0 mm. Similar to female habitus. Pedipalp with short and inwardly curved tibial apophysis and a thin and long embolus curved to the tip of the cymbium.
**World distribution:** Mediterranean.

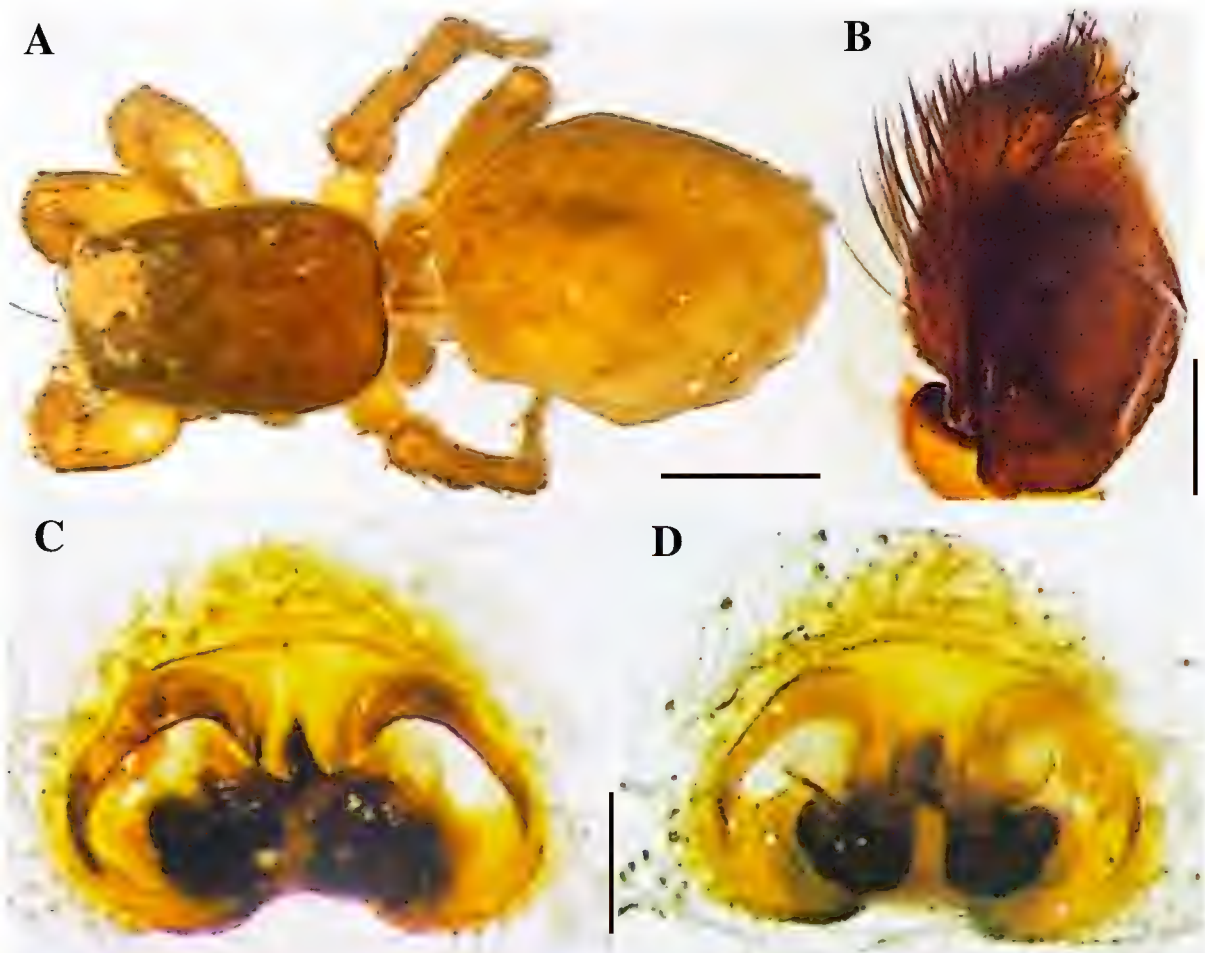


Fig. 1. *Aelurillus aeruginosus* (Simon, 1871) A. Male, habitus, dorsal view. B. Male palpal organ, prolateral view. C. Female epigyne, ventral view. D. Female vulvae, dorsal view. Scale bars: A. 1 mm. B-D. 0.2 mm.

## Acknowledgment

The authors are grateful to Ömer Halisdemir University. This study is a part of the master thesis of the first author.

## References

Azarkina, G.N. & Komnenov, M. 2015. Descriptions of two new species of *Aelurillus* Simon, 1884 (Araneae, Salticidae) from the Mediterranean, with the synonymization of *A. steliosi* Dobroruka, 2002. *ZooKeys*, 516: 109-122.

Bayram, A., Kunt, K.B. & Danışman, T. 2017. *The checklist of the spiders of Turkey*. Version 2017, online at http://www.spidersofturkey.info.

Coşar, İ. & Varol, M. İ. 2016. Six new records for the spider fauna of Turkey (Araneae: Salticidae). *Türkiye Entomoloji Dergisi – Turkish Journal of Entomology*, 40(2): 157-163.

Logunov, D.V. 2015. Taxonomic-faunistic notes on the jumping spiders of the Mediterranean (Aranei: Salticidae). *Arthropoda Selecta*, 24(1): 33-85.

Szüts, T. & Azarkina, G.N. 2002. Redescription of *Aelurillus subaffinis* Caporiacco, 1947 (Araneae: Salticidae). *Annales Historico-Naturales Musei Nationalis Hungarici*, 94: 209-215.

World Spider Catalog 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 18.0, accessed on {May 2017}

Yalçın, E., Topçu, A. & Demircan, N. 2016. A new record for the spider fauna of Turkey (Araneae: Salticidae). *Indian Journal of Arachnology*, 5(1-2): 84-85.

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# A new record of *Zygiella* for the Turkish spider fauna (Araneae: Araneidae)

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## Abstract

The araneid spider *Zygiella keyserlingi* (Ausserer, 1871) is recorded for the first time from Turkey. The morphological description, diagnosis, and figures of copulatory organs of both sexes are presented.

Keywords: Araneae, Araneidae, *Zygiella keyserlingi*, new record, Turkey.

## Introduction

Araneidae Clerck, 1757 is one of the most diverse families of spiders, with 3100 species in 169 genera. *Zygiella* F.O. Pickard-Cambridge, 1902 is a small araneid genus which contains 11 species and mostly distributed in Holarctic region of the world (World Spider Catalog, 2017). Members of the genus are small to medium sized orb-weavers, with oval abdomens of gray, silvery or yellowish colouration (Gertsch, 1964) and characteristic abdominal pattern (Levy, 1987). Four species occur in the European countries (World Spider Catalog, 2017). To date, two species have been reported in Turkey: *Z. montana* (C.L. Koch, 1834) and *Z. x-notata* (Clerck, 1757). *Z. montana* was recorded from Niğde Province (Topçu *et al.*, 2006) and *Z. x-notata* from Yozgat Province (Türkeş & Mergen, 2008).

The aim of the current study is to add *Zygiella keyserlingi* (Ausserer, 1871) as a new record for the araneid spider fauna of Turkey.

## Material and Methods

One male and six female specimens were collected by beating the bushes using a modified Japanese umbrella from Bursa and Kocaeli (İzmit) Provinces in Turkey (Fig. 1).

Locality 1: Kocaeli (İzmit) Province: 1♀, 1♂, 04.10.2016, Kızderbent village, Karamürsel, 40°33'38"N, 29°30'51"E, 208m. H. Burcu Gökalp.

Locality 2: Bursa Province: 5♀♀, 22.10.2016, Ballıkaya village, Karacabey, 40°21'47"N, 28°31'06"E, 53m. H. Burcu Gökalp, Rahşen S. Kaya, Ersen Aydın Yağmur.

The identification was made by using the descriptions of Wiehle (1931), Levi (1974), and Kovblyuk *et al.* (2008). The drawings were made by the means of a camera lucida attached to the Zeiss Stemi SR microscope. Digital images and measurements were taken by Leica Apo 8 stereo microscope. The measurements are taken from the dorsal side of the body. All measurements are in millimetres (mm). The specimens were preserved in 70% ethanol and deposited in the collection of the Zoological Museum, Department of Biology, Uludağ University, Bursa, Turkey.

The taxonomy follows World Spider Catalog (2017) and the terminology of male palpus follows Levi (1974) and Levy (1987).

Fig.1. The localities from which the specimens were collected: 1. Kocaeli (Karamürsel District), 2. Bursa (Karacabey District). The map is modified from Google Earth.

## Results

**Family** Araneidae Clerck, 1757
**Genus** *Zygiella* F.O. Pickard-Cambridge, 1902
**Type-species:** *Eucharia atrica* C.L. Koch, 1845
**Species** *Zygiella keyserlingi* (Ausserer, 1871)

**Synonyms**
*Zilla keyserlingii* Ausserer, 1871
*Zilla atrica* Chyzer & Kulczyński, 1891
*Zilla keyserlingi* Chyzer & Kulczyński, 1897; Wiehle, 1931.

**Description** (Figs. 2-11) (Description was made from the preserved specimens)
**Female**
General body measures were given in Table (1). Carapace light brown, longer than wide, cephalic region not much darker, margins encircled with a black line (Figs. 2, 5). Eye region, clypeus, and chelicerae are brown. Chelicerae with 3 promarginal and 3 retromarginal teeth with denticles in the cheliceral furrow. Sternum blackish, pointed

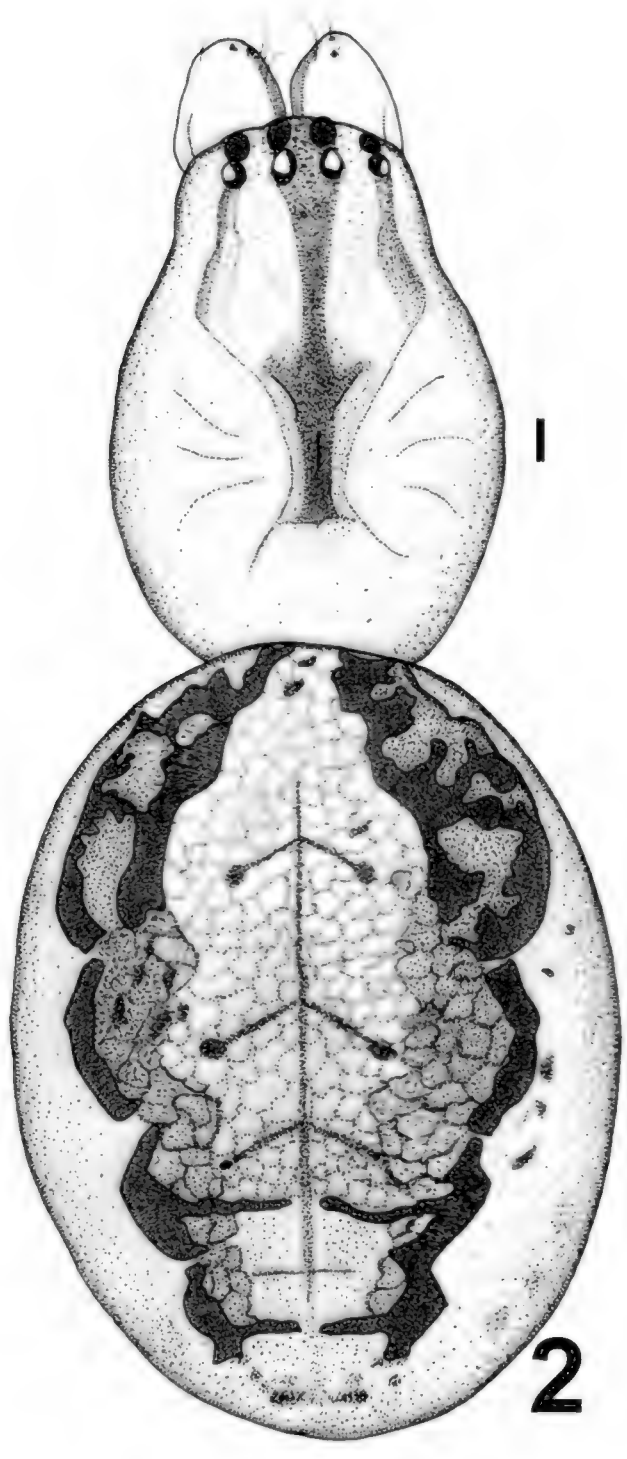
backwards, with a yellow median band. Legs light brown, with some annulations. Abdomen oval and black and white folium-like characteristic pattern is located on dorsally. Ventrally with a dark median line and white lines on each side.

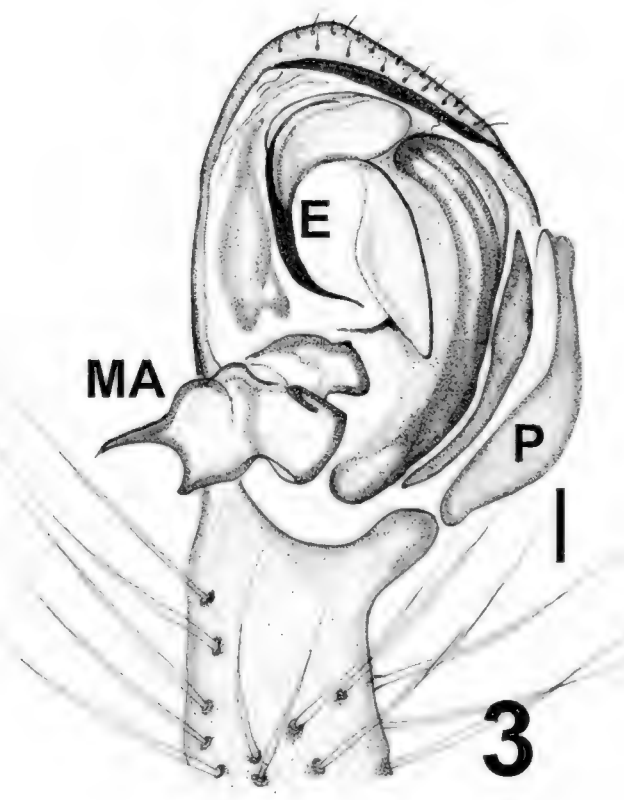
**Male**

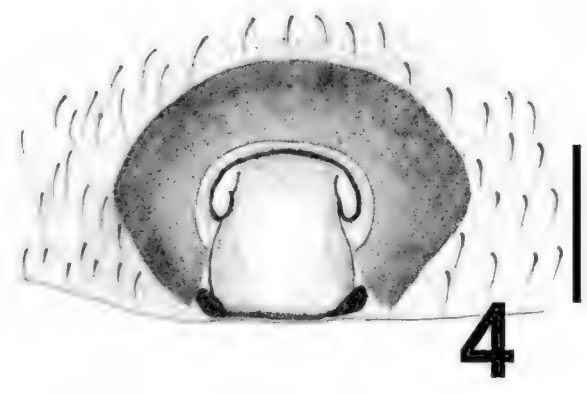
As female, except the following characteristics: Body paler than in female, with slimmer abdomen, legs lighter, thinner and longer than in female. A thoracic line is present on the carapace (Fig. 6).

Table 1. General body measurements (in mm) of *Zygiella keyserlingi* (Ausserer, 1871)
L = length, W = width, TBL = total body length.

| | Carapace L | Carapace W | Abdomen L | Abdomen W | TBL |
|---|---|---|---|---|---|
| **Female** | 1.4 - 2.2 | 1.4 - 1.6 | 2.1 - 4.1 | 1.8 - 3.2 | 4.0 - 6.0 |
| **Male** | 2.3 | 1.7 | 2.3 | 1.6 | 4.4 |




Figs. 2–4. *Zygiella keyserlingi* (Ausserer, 1871)
2. Female general habitus, dorsal view. 3. Male left palpus, ventral view. 4. Female epigynum, ventral view. Abbreviations: E = embolus, MA = median apophysis, P = Paracymbium. Scale lines: 0.1 mm.

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9 10 11

Figs. 5-11. *Zygiella keyserlingi* (Ausserer, 1871)
5. Female general habitus, dorsal view. 6. Male general habitus, dorsal view. 7. Female epigynum, ventral view. 8-11. Male left palpus. 8. ventral view, enlarged. 9. prolateral view. 10. ventral view. 11. retrolateral view.
Abbreviations: MA = median apophysis, P = Paracymbium. Scale lines: 5-6: 1 mm, 7-11: 0.1 mm.

## Diagnosis

*Z. keyserlingi* can be distinguished from the closely related species of the genus by the following genital characters:
1. Tibia of male palp 6-7 times longer than wide, swollen apically and the swollen part has more setae than the basal part.
2. Apical part of paracymbium is pointed (Fig. 11).
3. Median apophysis with two pointed branches, one longer and the other short (Figs. 3, 8-10).
4. Epigynum with a broad chitinous area (Figs. 4, 7).
5. The median plate of epigynum swollen and bordered anteriorly by a thin transverse lip (Figs. 4, 7).

## Habitat and Distribution

The orb webs of *Zygiella* species are recognizable in the field, since a small sector in the upper part of the web is left open and free of spirals. Our samples were collected from mixed forests composed of juniper, oak and shrubs by beating.

*Zygiella keyserlingi* is known from Southern European region and Ukraine (World Spider Catalog, 2017; Kovblyuk *et al.*, 2008). The recording of this species from Turkey widens its distribution.

## Acknowledgment

The authors wish to thank Dr. Ersen Aydın Yağmur (Celal Bayar University, Turkey) for his valuable help during our field trips. This study is a part of the master thesis of the first author.

## References

Gertsch, W.J. 1964. The spider genus *Zygiella* in North America (Araneae, Argiopidae). *American Museum Novitates*, 2188: 1-21.

Kovblyuk, M.M., Nadolny, A.A., Gnelitsa, V.A. & Zhukovets, E. 2008. Spiders (Arachnida, Aranei) of the Martyan Cape Reserve (Crimea, Ukraine). *Caucasian Entomological Bulletin*, 4: 3-40.

Levi, H. W. 1974. The orb-weaver genus *Zygiella* (Araneae: Araneidae). *Bulletin of the Museum of Comparative Zoology at Harvard College*, 146: 267-290.

Levy, G. 1987. Spiders of the genera *Araniella*, *Zygiella*, *Zilla* and *Mangora* (Araneae, Araneidae) from Israel, with notes on Metellina species from Lebanon. *Zoologica Scripta*, 16: 243-257.

Topçu, A., Seyyar, O., Demir, H. & Türkeş, T. 2006. A contribution to the knowledge of the Turkish spider fauna (Araneae). In: C. Deltshev & P. Stoev (eds.) European Arachnology 2005. *Acta Zoologica Bulgarica Supplement*, 1: 335-338.

Türkeş, T. & Mergen, O. 2008. The orb-web weavers spiders fauna of the central Anatolian region in Turkey with three new records for Turkey (Araneae, Araneidae). *Munis Entomology and Zoology*, 3: 295-302.

Wiehle, H. 1931. Spinnentiere oder Arachnoidea. Araneidae. In: Die Tierwelt Deutschlands. *Jena*, 27: 1-136.

World Spider Catalog 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 18.0, accessed on {04.04.2017}

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# A new cribellate spider for Turkey, *Titanoeca caucasica* Dunin, 1985 (Araneae: Titanoecidae)

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## Abstract

*Titanoeca caucasica* Dunin, 1985 is recorded for the first time from Turkey. Its morphology, measurements, distribution, and genitalia photographs are presented. The samples used in this study were collected by hand aspirator. By this study, the number of species of genus *Titanoeca* Thorell, 1870 is raised from three to four in Turkey.

Keywords: Araneae, Titanoecidae, *Titanoeca*, new record, Anatolia, Turkey.

## Introduction

Titanoecid spiders are small to medium sized araneomorph, cribellate, entelegyne, and eight eyed spiders. The calamistrum is long, slender, and in a single row. The sternum is oval shaped with anterior margin slightly straight. Legs with three tarsal claws. Metatarsi bear one subapical trichobothrium; but tarsi do not. Male palps do not have retrolateral tibial apophysis; but have complex distal tibial apophysis. Cribellum is divided and as wide as the base of spinnerets (Jocqué & Dippenaar-Schoeman, 2006).

Family Titanoecidae Lehtinen, 1967 has globally 53 species under 5 genera (World Spider Catalog, 2017) and is represented by 2 genera and 5 species in Turkey (Bayram *et al.*, 2017; Demircan & Topçu, 2015). With this study, the number of species of this family is raised to six in Turkey.

Genus *Titanoeca* Thorell, 1870 is established in Family Agelenidae, Sub-Family Amaurobiinae by Thorell (1870). Lehtinen (1967) elevated this genus to family rank, Titanoecidae, with *Nurscia* Simon, 1874, *Goeldia* Keyserling, 1891, and two other newly described genera, *Anuvinda* Lehtinen, 1967 and *Pandava* Lehtinen, 1967.

This short paper reports the presence of *Titanoeca caucasica* Dunin, 1985 in Turkey. The species is also recorded for the first time from outside its type locality, Azerbaijan.

## Material and Methods

The specimens were collected in 2013-2014 from Muş Province, East Anatolia Region of Turkey were used in this study. Samples were collected by means of hand aspirator under stones and on open stony fields. Identification was according to Dunin (1985). Samples were preserved in 70% ethanol and were kept at the personal collection of the author. Abbreviations used in the text are: ALE = anterior lateral eye, AME = anterior median eye, PLE = posterior lateral eye, PME = posterior median eye. All measurements are given in millimetres.

## Results

***Titanoeca caucasica*** Dunin, 1985

**Material examined:** 2♀♀, Muş Province, Hasköy District, Near Yarkaya Village (38°37'43.6"N, 41°46'42.8"E); 2♀♀, Muş Province, Hasköy District, Near Otaç Village (38°36'50.5"N, 41°51'18.4"E); 2♀♀, Muş Province, Korkut District, Near Güven Village (38°48'34.5"N, 41°45'06.7"E). Leg. Gökhan Gündüz.

Figs. 1-4. *Titanoeca caucasica* Dunin, 1985 ♀. 1. Habitus, dorsal view.
2. Epigyne, ventral view. 3-4. Vulvae. 3. ventral view. 4. anterior view.

**Description** ♀: Measurements: Total length: 5.75; Prosoma length 2.4, width 1.5; Abdomen length 3.4, width 2.2 (n = 6). Prosoma dark brown with slightly elevated and hairy cephalic part. Sternum dark brown and round shaped. Anterior eye row straight or slightly procurved. Posterior eye row markedly procurved. The distance between AMEs

shorter than distance between PMEs. ALE and PLE are so close to each other, almost touching. Chelicerae dark brown, with long hairs anteriorly and short fine spines laterally. There are two little cheliceral teeth on the retromargin and three on the promargin of the cheliceral furrow. Gnathocoxa dark gray, two and half time longer than wide and almost parallel to each other. Leg formula 1423 (Table 1). Metatarsi ventrally have four pairs of short spines and one trichobothrium near apex. Palp with a claw and several robust short spines. Abdomen dark without any pattern. Spinnerets yellowish brown. Cribellum bipartite. Calamistrum in one row, almost as long as metatarsus IV. Genital opening is roughly triangular. Epigyne has circle shaped spermatechae (Figs. 1-3). *T. caucasica* can be easily distinguished from the other three species of the genus in Turkey by the shape of its entrance ducts.
Distribution: Azerbaijan (World Spider Catalog, 2017).

Table 1. Measurements of leg segments of *Titanoeca caucasica* Dunin, 1985 ♀ (n = 6).

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total length |
|---|---|---|---|---|---|---|
| I | 2.1 | 1.0 | 1.9 | 1.4 | 1.0 | 7.4 |
| II | 2.0 | 0.6 | 1.4 | 1.2 | 0.8 | 6.0 |
| III | 1.9 | 0.6 | 1.3 | 1.1 | 0.8 | 5.7 |
| IV | 1.9 | 1.0 | 1.3 | 1.1 | 0.9 | 6.2 |

While *Titanoeca* is represented by 14 species in Europe and 7 species in the Caucasus, only 3 species are known from Turkey (Nentwig *et al.*, 2017; Otto, 2015). Further studies will probably increase our knowledge about the situation of this genus in Turkey. With this study, the number of species of this genus in Turkey has increased to 4.

## Acknowledgment

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## References

Bayram, A., Kunt, K.B. & Danışman, T. 2017. *The checklist of the spiders of Turkey*. Version 2017, online at http://www.spidersofturkey.info.

Demircan, N. & Topçu, A. 2015. A contribution to the spider fauna of the European part of Turkey (Araneae). *Serket*, 14(4): 176-183.

Dunin, P.M. 1985. A new species of spiders from the genus *Titanoeca* in the eastern part of Great Caucasus (Aranei, Titanoecidae). *Zoologicheskiĭ Zhurnal*, 64: 932-934.

Jocqué, R. & Dippenaar-Schoeman, A.S. 2006. *Spider Families of the World*. Musée Royal de l'Afrique Central, Tervuren, 336 pp.

Lehtinen, P.T. 1967. Classification of the cribellate spiders and some allied families, with notes on the evolution of the suborder Araneomorpha. *Annales Zoologici Fennici*, 4: 199-468.

Nentwig, W., Blick, T., Gloor, D., Hänggi, A. & Kropf, C. 2017. Spiders of Europe. www.araneae.unibe.ch. Version 05.2017.

Otto, S. 2015 Caucasian Spiders. A faunistic database on the spiders of the Caucasus. Version 1.4.3. Internet: http://caucasus-spiders.info.

Thorell, T. 1870. On European spiders. *Nova Acta Regiae Societatis Scientiarum* Upsaliensis, (3)7: 109-242.

World Spider Catalog 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 18.0, accessed on {May 2017}

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# First record of genus *Cyrba* Simon, 1876 from India (Araneae: Salticidae)

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## Abstract

*Cyrba ocellata* (Kroneberg, 1875) is recorded from India for the first time. This is the first record of genus *Cyrba* Simon, 1876 in India too.

Keywords: Araneae, Salticidae, *Cyrba*, new record, India.

## Introduction

Salticidae Blackwall, 1841 contains over 5945 nominal species worldwide placed in over 620 genera (World Spider Catalog, 2017). These jumping spiders have very large anterior median eyes which can form high resolution pictures of prey (Prószyński, 2003). Eyes form square arranged in three rows. They have very strong legs especially legs III and IV; 1st legs are strong for tactile and catching purposes.

Genus *Cyrba* was established by Simon (1876). It is a small old world genus which includes 10 species distributed in Central Asia, Ethiopia, south and east Africa, Kenya, Madagascar, Australia, Sudan to china (World Spider Catalog, 2017). *Cyrba* is mainly characterized by mutiliform fields on abdomen, apodemes which resembles like a lightly sclerotized spots. Other characters of *Cyrba* includes: long fovea, eyes on tubercles, promarginal and retromarginal cheliceral teeth, small posterior median eyes etc (Wanless, 1984). It resembles and shares most of the characters with *Gelotia* Thorell 1890 but *Cyrba* can be distinguished by palpal and epigynal morphology, *Gelotia* possesses a cap-like retrolateral tibial apophysis (RTA) and in *Cyrba* it is prong like. Females of *Cyrba* are distinguished on the base of epigynal caudal edge. They are well known for web-invader and kleptoparasitism.

Present paper presents the description of *Cyrba ocellata* (Kroneberg, 1875) as the first record of genus *Cyrba* from India.

## Material and Methods

The present study is based on one female specimen collected on 1st December 2016 from Chincholi forest by active search method and hand picking. It was preserved in 70% ethanol and female genitalia were excised using fine surgical scalpel. The epigyne was then cleared in 10% KOH aqueous solution. The basic identification of the specimen was made by a Carl-Zeiss Stemi 2000-c Stereo-Zoom microscope mounted with Axio Cam ERc5s camera. The specimen is currently deposited in the Spider Research Centre of J. D. Patil Sangludkar Mahavidyalaya campus, Daryapur. All measurements are in millimetres. Abbreviations used: AER = anterior eyes row, ALE = anterior lateral eye, AME = anterior median eye; CD = copulatory duct; d = dorsal; dt = dorsal terminal; FD = fertilization duct; L = length; LCL = lobe of caudal ledge; MEG = margin of epigynal guide; p = prolateral; PLE = posterior lateral eye; PME = posterior median eye; r = retrolateral; S = spermatheca; v = ventral; vt = ventral terminal; W = width.

## Results

***Cyrba ocellata*** (Kroneberg, 1875)

**Material examined**: One female collected from Chikkalingadhalli, Chincholi forest (17°26'23.7"N, 77° 29'46.9"E) on 1st December 2016 by Supriya T. Research scholar Govt. College, Kalaburgi.

**Description:** Total length 7.17; Cephalothorax L 2.7, W 1.81; Abdomen L 3.5, W 2.2, Sternum L 1.1, W 0.8; Chelicera 0.53. AME 0.46, PME 0.07, ALE 0.11, PLE 0.22, AME-AME 0.05, PME-PME 1.21, AME-ALE 0.02, PME-PLE 0.26.

Carapace Roughly rectangular, pale yellow at the middle, black at eye quadrangle, light brown at peripheral region. Few brownish hairs spread over the dorsal carapace. Fovea is dark brown and elongated covers one forth of entire length of carapace and thoracic grooves are not clearly distinguished. Eyes arranged in three rows, arranged in three sides of square, AME is very large and PME very small. Lateral eyes are nearly equal in size but smaller than AME and bigger than PME. PLE is present on small tubercles directed to sides. All eyes bordered with black. AER procurved. Honeyed yellow chelicerae embodied with curved like long whitish setae, consisting of five teeth at promargin: 3 are slightly bigger than rest of teeth and five retromarginal teeth. Labium is oval and endites wider than long, bordered with whitish hair, labium and endites rebordered. Sternum is oval, pale yellow, and has only a few hairs. Leg formula: 4123, pale yellow shaded with brown except femur which is slightly grey. Coxa is rectangular. Patella, tibia, and metatarsus are cylindrical. Femora I & II are wider than III & IV. Shortly elongated tarsi consist of claw tuff and two claws. Legs are overlaid with small light brown hairs.

Abdomen elliptical, posterior darker grey compared to anterior side. Anterior and posterior peripherals bordered by outgrowth of remarkable hairs. Ventral colour matches with dorsal. Abdomen has no remarkable markings or bands. Mutiliform field is not clear. Spinnerets grey and equal in length.

Epigynum: dorsally resembles amphora, lobes of caudal ledge join with margins of embolic guide which runs between the spermathecae and finally combine with copulatory ducts, copulatory duct (CD) is twisted before it opens to the exterior. Fertilization duct short, arises at posterior base of spermatheca.

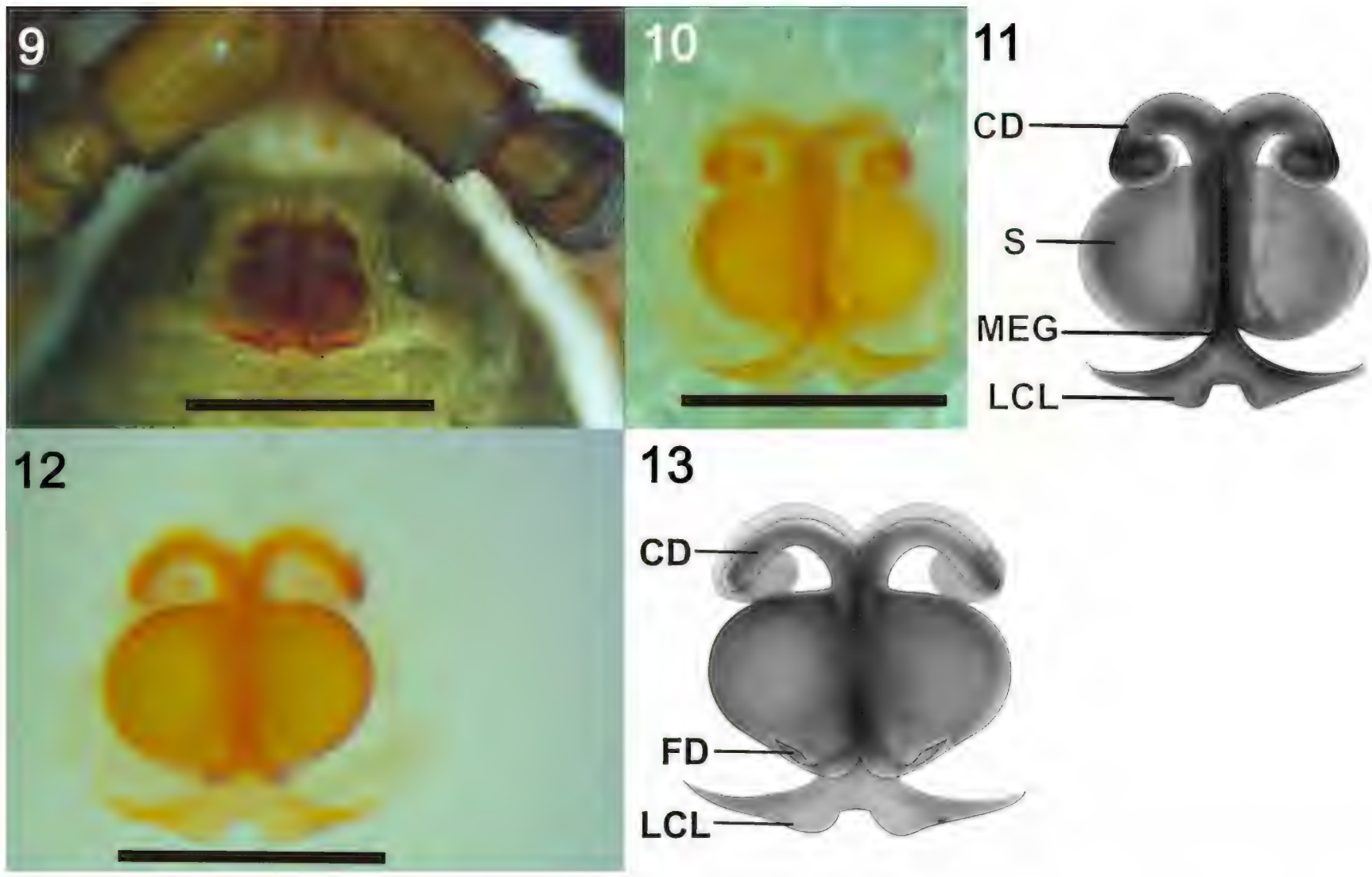
Figs. 1-8. *Cyrba ocellata* (Kroneberg, 1875) ♀. 1-3. Habitus. 1-2. dorsal view. 3. ventral view. 4-5. Sternum. 6-8. Carapace. 6. dorsal view. 7-8. lateral view. Scale bars: (1 & 3) 2 mm, (4, 6 & 7) 1 mm.

Table 1. Measurements of leg segments of *Cyrba ocellata* (Kroneberg, 1875) ♀.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total Length |
|---|---|---|---|---|---|---|
| I | 1.33 | 0.81 | 1.20 | 1.00 | 0.71 | 5.05 |
| II | 1.22 | 1.09 | 0.88 | 0.63 | 0.64 | 4.46 |
| III | 0.81 | 0.73 | 1.07 | 0.95 | 0.71 | 4.27 |
| IV | 1.47 | 0.66 | 1.51 | 1.18 | 0.69 | 5.51 |

Table 2. Spination of legs of *Cyrba ocellata* (Kroneberg, 1875) ♀.

| Leg | Femur | Patella | Tibia | Metatarsus |
|---|---|---|---|---|
| I | D1-1-3 | --- | P 1-1-1 v1-1-1 | V2 |
| II | D1-1-3 | --- | V1-1 vt2 | V2 p1 |
| III | D1-1-2 p1 | P1 r1 | D1, p1-1-1 r1-1 v1-1 vt2 | P1 r1 d1 v2 vt4 |
| IV | D 1-1-2 p1 | P1 r1 | D1-1, p1-1, r1-1, v1-1, vt1 | D1-1, dt1 P1-1-1, r1, v1-1-1 |




Figs. 9-13. *Cyrba ocellata* (Kroneberg, 1875) ♀. 9-11. Epigynum, ventral view. 10-11. cleared. 12-13. Vulvae, dorsal view. Scale bars: (9) 2 mm, (10 & 12) 0.5 mm.

## Discussion

Genus *Cyrba* is known for kleptoparasitic predation, dancing during intraspecific interaction (Prószyński, 1992), secretion of femoral sex pheromones from adult male, and abdominal mutiliform fields. It includes 10 species reported till date, there is no record of its occurrence in India so that present study imparts its first record in India along with the description of *Cyrba ocellata* from India. Our description agrees the descriptions of this species, known from Somalia, Sudan to China, Australia (World Spider Catalog, 2017), by Jastrzębski (1997), Wanless (1984), Wesolowska (1996), and Wesolowska & Harten (2010).

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## References

Jastrzębski, P. 1997. Salticidae from the Himalayas. Subfamily Spartaeinae Wanless, 1984 (Araneae: Salticidae). *Genus*, 8: 701-713.

Kroneberg, A. 1875. Araneae. In: Fedtschenko, A. P. (ed.) Puteshestvie v Tourkestan. Reisen in Turkestan. *Zoologischer Theil. Nachrichten der Gesellschaft der Freunde der Naturwissenschaften zu Moskau*, 19: 1-58.

Prószyński, J. 1992. Salticidae (Araneae) of the Old World and Pacific Islands in several US collections. *Annales Zoologici, Warszawa*, 44: 87-163.

Prószyński, J. 2003. Salticidae (Araneae) of the Levant. *Annales Zoologici, Warszawa*, 53: 1-180.
Simon, E. 1876. *Les arachnides de France. Tome troisième*. Roret, Paris, 364 pp., pl. IX-XIII.

Wanless, F.R. 1984. A revision of the spider genus *Cyrba* (Araneae: Salticidae) with the description of a new presumptive pheromone dispersing organ. *Bulletin of the British Museum of Natural History* (Zool.), 47: 445-481.

Wesolowska, W. & Harten, A. van 2010. Order Araneae, family Salticidae. In: van Harten, A. (ed.) *Arthropod Fauna of the UAE*. Dar Al Ummah, Abu Dhabi, 3: 27-69.

Wesolowska, W. 1996. New data on the jumping spiders of Turkmenistan (Aranei Salticidae). *Arthropoda Selecta*, 5(1/2): 17-53.

World Spider Catalog 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 18.0, accessed on {09/04/2017}

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# The first record of *Phlegra bresnieri* (Lucas, 1846) in Egypt (Araneae: Salticidae)

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## Abstract

*Phlegra bresnieri* (Lucas, 1846) of family Salticidae is recorded from Egypt for the first time. It is the fifth recorded species of genus *Phlegra* in Egypt.

**Keywords:** Spiders, Salticidae, *Phlegra bresnieri*, Menoufiya, Egypt.

## Introduction

Family Salticidae Blackwall, 1841 is the greatest spider family (5950 species of 625 genera) [12.73% of known spider species] (World spider Catalog, 2017). In Egypt, 79 salticid species are recorded by El-Hennawy (2006: 72 species of 35 genera) and Logunov (2015: 1 new species and 5 newly recorded species), in addition to *Plexippus clemens* (O. Pickard-Cambridge, 1872) recorded from Egypt for the first time by El-Hennawy *et al.* (2015). Genus *Phlegra* Simon, 1876 includes 78 species and 1 subspecies, recorded from Mediterranean, African, and Asian countries with one species from North America. Its type species *P. fasciata* (Hahn, 1826) is Palaearctic (World spider Catalog, 2017).

Members of the *bresnieri* species group, of genus *Phlegra*, can be recognized by the distinctive genitalia; "Males have the palp with a more or less subparallel tibial apophysis and a slender embolus. Females have the epigyne with large round fossae, but without a median septum; spermathecae tube-chambered, with tube-like inlet ducts" (Logunov, 1996).

In Egypt, 4 endemic species of *Phlegra* are known: *P. memorialis* (O. Pickard-Cambridge, 1876) from Upper Egypt and Siwa Oasis, *P. flavipes* Denis, 1947 and *P. proxima* Denis, 1947 from Siwa Oasis, and *P. pori* Prószyński, 1998 from Mt. Catherina (southern Sinai) (El-Hennawy, 2006). *Phlegra bresnieri* (Lucas, 1846) is here

recorded for the first time in Egypt from the orchards of the farm of Faculty of Agriculture, Al-Azhar University, El-Sadat City, Menoufiya Governorate, west of the Nile Delta of Egypt (Fig. 1).

Abbreviations used: AL = abdomen length; CL = cephalothorax length; CW = cephalothorax width; TL = total length. All measurements were taken in millimetres.

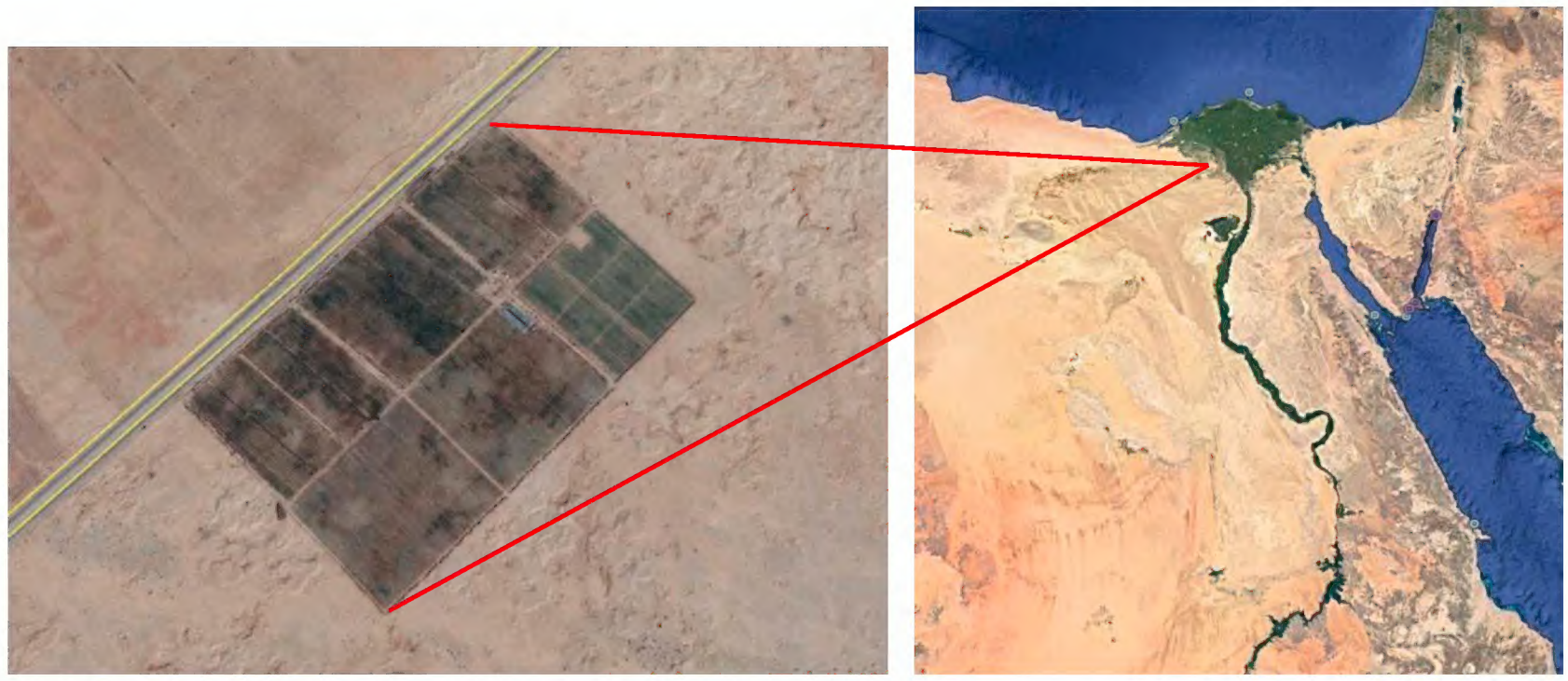


Fig. 1. Map of the farm of Faculty of Agriculture, El-Sadat City, Egypt.

Lucas (1846) described the male and female of the new species *Salticus bresnieri* from Algeria (Fig. 2). The same species was recorded and described later from other countries from southern Europe to Azerbaijan, Iran, and Africa (World spider Catalog, 2017). Identification of the species depended on Fuhn & Gherasim (1995), Logunov (1996), Logunov & Azarkina (2006), Metzner (1999), Simon (1876, 1937), and Wesołowska & Harten (2007).

Fig. 2. Male *Phlegra bresnieri* (Lucas, 1846) pl. 7, f. 8.

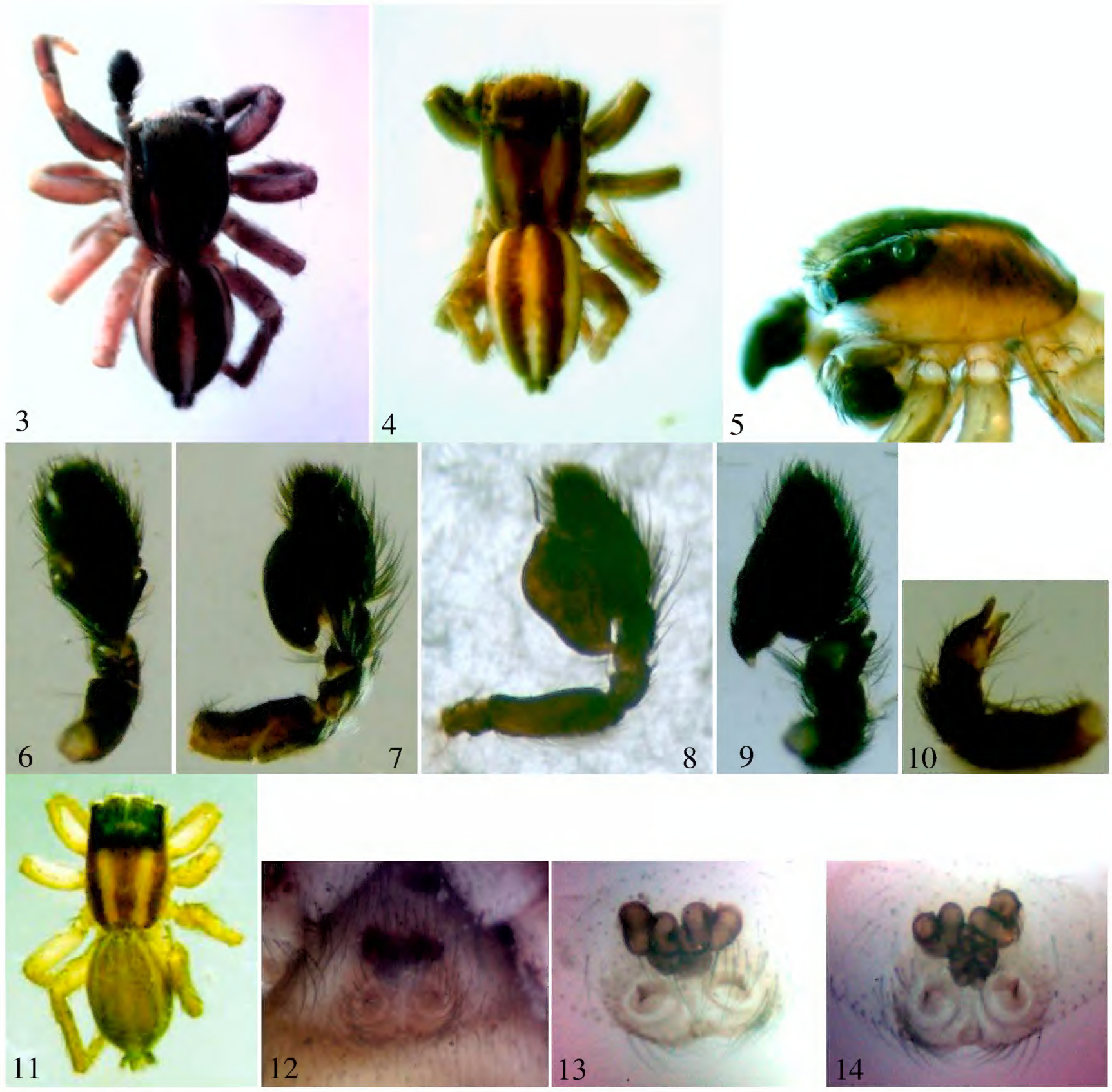
***Phlegra bresnieri*** (Lucas, 1846)
(Figs. 2-14)

*Salticus bresnieri* Lucas, 1846: 154-155, pl. 7, f. 8 (D♂♀).
Other references and synonyms are in the World spider Catalog (2017).

Material examined: 10♂♂ 1♀ Egypt, Menoufiya, Farm of Faculty of Agriculture, Al-Azhar University, El-Sadat City (30°25'12.99"N, 30°32'34.67"E, elevation 29m), Orchards of citrus, peach, apple, banana, and pomegranate, 20.11.2016-12.03.2017, leg. A.A. El-Gendy.

Description. See: Fuhn & Gherasim (1995), Logunov (1996), Logunov & Azarkina (2006), Metzner (1999), Simon (1876, 1937), and Wesołowska & Harten (2007).
Measurements. Male (Figs. 2-10): TL 3.7, CL 1.9, CW 1.2, AL 1.8.
Female (Figs. 11-14): TL 4.3, CL 1.8, CW 1.26, AL 2.5.
Male pedipalp. Figs. (6-10). Female epigynum and vulvae. Figs. (12-14).

Distribution. This species is recorded from southern Europe to Azerbaijan, Iran, and Africa (World spider Catalog, 2017).




Figs. 3-14. *Phlegra bresnieri* (Lucas, 1846). 3-10. Male. 3-5. Habitus. 3-4. dorsal view. 5. lateral view. 6-10. Palpal organ. 6. ventral view. 7-9. retrolateral view. 10. subparallel tibial apophysis. 11-14. Female. 11. Habitus, dorsal view. 12. Epigynum, ventral view. 13-14. Vulvae, dorsal view.

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## References

El-Hennawy, H.K. 2006. A list of Egyptian spiders (revised in 2006). *Serket*, 10(2): 65-76.

El-Hennawy, H.K., Mohafez, M.A. & El-Gendy, A.A. 2015. The first record of *Plexippus clemens* (O.P.-Cambridge, 1872) (Araneae: Salticidae) in Egypt. *Serket*, 14(2): 128-133.

Fuhn, I.E. & Gherasim, V.F. 1995. *Familia Salticidae*. Fauna Romaniei, Arachnida, 5(5): 1-301. (Bucuresti, Ed. Acad. Roman.)

Logunov, D.V. 1996. A review of the genus *Phlegra* Simon, 1876 in the fauna of Russia and adjacent countries (Araneae: Salticidae: Aelurillinae). *Genus*, 7: 533-567.

Logunov, D.V. 2015. Taxonomic-faunistic notes on the jumping spiders of the Mediterranean (Aranei: Salticidae). *Arthropoda Selecta*, 24(1): 33-85.

Logunov, D.V. & Azarkina, G.N. 2006. New species and records of *Phlegra* from Africa (Araneae, Salticidae). *Revue Suisse de Zoologie*, 113: 727-748.

Lucas, H. 1846. Histoire naturelle des animaux articules. In: Exploration scientifique de l'Algérie pendant les années 1840, 1841, 1842 publiée par ordre du Gouvernement et avec le concours d'une commission académique. Paris, Sciences physiques, Zoologie, 1: 89-271.

Metzner, H. 1999. Die Springspinnen (Araneae, Salticidae) Griechenlands. *Andrias*, 14: 1-279.

Simon, E. 1876. *Les arachnides de France. Tome troisième*. Roret, Paris, 364 pp., pl. IX-XIII.

Simon, E. 1937. *Les arachnides de France. Synopsis générale et catalogue des espèces françaises de l'ordre des Araneae. Tome VI. 5e et derniére partie*. Roret, Paris, 979-1298.

Wesołowska, W. & Harten, A. van 2007. Additions to the knowledge of jumping spiders (Araneae: Salticidae) of Yemen. *Fauna of Arabia*, 23: 189-269.

World Spider Catalog 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 18.0, accessed on {May 2017}